



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,684	09/18/2003	Robert J. Nealon	LUC-423/Nealon 3	8253
32205 7590 04/23/2008 PATTI, HEWITT & AREZINA LLC ONE NORTH LASALLE STREET 44TH FLOOR CHICAGO, IL 60602				
EXAMINER				
MILLS, DONALD L				
ART UNIT		PAPER NUMBER		
2616				
MAIL DATE		DELIVERY MODE		
04/23/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/666,684

Applicant(s)

NEALON, ROBERT J.

Examiner

DONALD L. MILLS

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 13 February 2008 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, and 4-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen, JR. et al. (US 2001/0017861 A1), hereinafter referred to as Allen, in view of Breuckheimer et al. (US 6,496,508 B1), hereinafter referred to as Breuckheimer.

Regarding claims 1, 7, 12, and 16, Allen discloses an ATM based distributed virtual tandem switching system, which comprises:

Forming a cluster of media gateways, each of the media gateways having a respective transcoder (Referring to Figure 4, T-IWF 28 and CS-IWF 30 (cluster of media gateways) which provide protocol and signaling conversion (transcoder). See paragraphs 0045 and 0046;)

Providing at least one first media gateway of the cluster of media gateways having an integrated broadband SS7 signaling gateway, at least one second media gateway of the cluster of media gateways being without an integrated broadband SS7 signaling gateway (Referring to Figure 4, the centralized control and signaling interworking function, CS-IWF 30, performs call control functions and conversion between narrowband signaling, Signaling System 7 (SS7), protocol, and a broadband signaling protocol for call processing and control within the ATM network, the T-IWF 28 does not provide such signaling. See paragraphs 0045 and 0046;) and

Using the at least one first media gateway for SS7 signaling and using at least one second gateway for resources other than SS7 signaling (Referring to Figure 4, CS-IWF 30 performs SS7 signaling and the CS-IWF 30 provides protocol conversion to and from TDM/ATM. See paragraphs 0045 and 0046.)

Using a single media gateway with an integrated broadband SS7 signaling gateway as a single SS7 point code for more than one gateway of the cluster of media gateways (Referring to Figure 4, the centralized control and signaling interworking function, CS-IWF 30, performs call control functions and conversion between narrowband signaling, Signaling System 7 (SS7), protocol, and a broadband signaling protocol for call processing and control within the ATM network, comprising a single SS7 point code. See paragraphs 0045, 0046, and 0073.)

Allen does not disclose *whereby all resources of all media gateways in the cluster are available for a particular call.*

Allen teaches an ATM-based distributed virtual tandem switching system, which comprises end offices provisioning trunk groups to different destination end offices. While, the system allows one to dynamically sharing bandwidth since it is not dedicated to any TDM voice

channels between predetermined locations (See paragraphs 0048 and 0048.) Therefore, the pre-assigned connections at the end offices does not permit the sharing of "all resources." However, Breuckheimer teaches a communication system and architecture and method of establishing a communication connection, which comprises end-to-end connections between TDM and ATM systems via pre-provisioning. For example, a first connection map is generated that associates narrowband trunks and virtual circuit identities. Following the pre-provisioning of at least one through path connection at the network adaptor interface or the broadband interface, the connection broker is then in a position to receive a connection instruction from a call server. The connection broker can then route the connection request to the entity containing the appropriate service logic/hardware. Once a through path has been identified the path is opened. The system can dynamically vary pre-provisioning within the connection maps associated with the network adaptors and/or switch fabric, subject to additional resources/ports becoming available (Referring to Figure 7, lines 22-45.) Essentially, Breuckheimer extends the end-to-end connection process to include narrowband trunks, as opposed to concentrating primarily on virtual channels. This effectively increases the number of resources available to include all of the switches/gateways/network adaptors in network for a particular call.

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the dynamic pre-provisioning of Breuckheimer in the system of Allen. One of ordinary skill in the art at the time of the invention would have been motivated to do so in order to reduce the cost of forecasting and pre-provisioning by efficiently managing narrowband trunks according to the availability of resources/ports, as taught by Allen (See paragraph 0021.) An added benefit of doing so would result in the ability to perform on demand provisioning which

would efficiently manage resources according to the current demand and load. In so doing unexpected results are not achieved.

Regarding claims 2 and 19, the primary reference further teaches *distributing control signaling related to the establishment, release and maintenance of AAL2 point-to-point connections across a series of ATM VCCs that carry AAL2 links* (Referring to Figure 4, AAL2 switched virtual connections (SVC which is a type of VCC) are established, maintained, and terminated for each call (point-to-point connection across a series of SVC's). See paragraphs 0062-0064.)

Regarding claims 4, 9, 14 and 17, the primary reference further teaches *using a single broadband SS7 signaling stack as the AAL2 signaling entity to the multiple AAL2 service endpoints acting as AAL2 served users* (Referring to Figure 4, AAL2 switched virtual connections are established, maintained, and terminated for each call (multiple AAL2 service endpoints, source and destination in this example,) via the centralized CS-IWF 30 (single broadband SS7 signaling stack), which performs call control functions and conversion between narrowband signaling, Signaling System 7 (SS7), protocol, and a broadband signaling protocol for call processing and control within the ATM network. See paragraphs 0045, 0046, and 0062-0064.)

Regarding claims 5, 10, and 15, the primary reference further teaches *using an AAL2 signaling protocol that provides the signaling capability to establish, release and maintain AAL2 point-to-point connections across a series of ATM VCCs that carry AAL2 links* (Referring to Figure 4, AAL2 switched virtual connections are established, maintained, and terminated for each call (AAL2 point-to-point service,) via the centralized CS-IWF 30 (single broadband SS7

signaling stack), which performs call control functions and conversion between narrowband signaling, Signaling System 7 (SS7), protocol, and a broadband signaling protocol for call processing and control within the ATM network. See paragraphs 0045, 0046, and 0062-0064.)

Regarding claims 6 and 11, and further regarding claim 16, the primary reference further teaches *the signaling protocol is defined as a set of at least three entities including a protocol entity, a nodal function, and a served user, and wherein, a respective interface is operatively connected between the nodal function and the served user for each of the media gateways, and wherein the first gateway contains the nodal functions and each of the media gateway contain a served user* (Referring to Figure 4, the centralized control and signaling interworking function, CS-IWF **30**, (protocol entity and nodal function) performs call control functions and conversion between narrowband signaling, Signaling System 7 (SS7), protocol, and a broadband signaling protocol for call processing and control (interface operatively connected between the nodal function and served user) within the ATM network, the T-IWF **28** services the End Offices **20** and **22** (served user). See paragraphs 0045 and 0046.)

Regarding claims 8, 13 and 18, the primary reference further teaches *using a single media gateway with an integrated broadband SS7 signaling gateway as a single SS7 point code for more than one gateway of the cluster of media gateways* (Referring to Figure 4, the centralized control and signaling interworking function, CS-IWF **30**, performs call control functions and conversion between narrowband signaling, Signaling System 7 (SS7), protocol, and a broadband signaling protocol for call processing and control within the ATM network, comprising a single SS7 point code. See paragraphs 0045, 0046, and 0073.)

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Allen (US 2001/0017861 A1) in view of Breuckheimer (US 6,496,508 B1) in further view of Benedyk et al. (US 6,952,433 B1), hereinafter referred to as Benedyk.

Regarding claim 3 as explained in the rejection statement of claim 1, Allen discloses all of the claim limitations of claim 1 (parent claim).

Allen does not disclose *using a single broadband SS7 signaling gateway for multiple wireless access gateways*.

Allen discloses a centralized control and signaling interworking function device, which acts a single broadband SS7 signaling gateway (Referring to Figure 4, see paragraphs 0045 and 0046.). Benedyk teaches a method and system for routing messages in a radio access network utilizing a gateway which interfaces to a traditional SS7 or ATM network, in which a Radio Access Network Gateway provides the signaling for multiple Radio Access Network Controllers (multiple wireless access gateways) (Referring to Figure 3, see paragraph 0023, 0025, and 0026.)

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the Radio Access Network Controllers of Benedyk in the system of Allen. One of ordinary skill in the art at the time of the invention would have been motivated to do so in order to improve system access by extending service to wireless handsets for conventional SS7 and ATM-based network elements as taught by Benedyk (See paragraph 0023.)

Response to Arguments

5. Applicant's arguments with respect to claims 1, 2, and 4-19 have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant's arguments filed 13 February 2008, regarding claim 3, have been fully considered but they are not persuasive.

Rejection Under 35 USC 103

On page 15 of the remarks, regarding claim 3, the Applicant argues neither Allen nor Benedyk disclose, teach, or otherwise make obvious *using a single broadband SS7 signaling gateway for multiple wireless access gateways*. The Examiner respectfully disagrees. The Examiner interprets the claim to mean that a single broadband SS7 signaling gateway interfaces with a multiple number of wireless access gateways. Allen discloses a centralized control and signaling interworking function device, which acts a single broadband SS7 signaling gateway (Referring to Figure 4, see paragraphs 0045 and 0046.). Benedyk teaches a method and system for routing messages in a radio access network utilizing a gateway which interfaces to a traditional SS7 or ATM network, in which a Radio Access Network Gateway provides the signaling for multiple Radio Access Network Controllers (multiple wireless access gateways) (Referring to Figure 3, see paragraph 0023, 0025, and 0026.) When taken in combination, Allen teaches the centralized control and signaling interworking function and Benedyk teaches the number of radio access network gateways. It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the Radio Access Network Controllers of Benedyk in the system of Allen. One of ordinary skill in the art at the time of the invention would have been motivated to do so in order to improve system access by extending service to wireless handsets for conventional SS7 and ATM-based network elements as taught by Benedyk (See paragraph 0023.) Essentially, the Examiner contends that the claim merely represents the implementation of combining two known technologies (centralized signaling and wireless

gateways, respectively), in which the prior art establishes a reasonable motivation to combine the known references. The prior art teaches all of the claimed limitations, furthermore, Benedyk teaches that such wireless networks are commonly paired to existing technologies, such as ATM. In addition, the combination does not yield unexpected results. Therefore, Allen and Benedyk make obvious *using a single broadband SS7 signaling gateway for multiple wireless access gateways*.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DONALD L. MILLS whose telephone number is (571)272-3094. The examiner can normally be reached on 9:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2616

/Donald L Mills/

Examiner, Art Unit 2616

April 18, 2008